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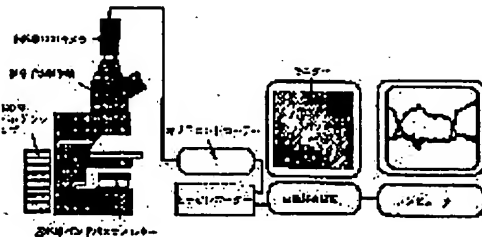
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## (54) METHOD FOR ANALYZING BRAIN EDEMA

## (57)Abstract:

**PROBLEM TO BE SOLVED:** To quantitatively and objectively comprehend the degree and quality of a brain edema by applying stimulus for inducing the brain edema to a brain slice, and obtaining changes with respect to time of brain cells as infrared image data.

**SOLUTION:** A brain slice is obtained by slicing a cerebral cortex, a cerebellum, a hippocampus of an experimental animal such as rat, mouse or the like. A stimulus for inducing brain edema is physical and chemical stimuli, such as ischemia, electrical stimuli, drugs, etc. For example, for forming an ischemic state, a solution subjected to oxygen bubbling is watered to the brain slice, and the water solution is supplied after turned into a solution without oxygen or glucose. An infrared differential interference microscope is solely used to obtain image data. The brain slice is picked up in real time by an infrared detection apparatus set to the microscope. The cell form of a brain's deep part is formed into a two-dimensional infrared image. The obtained image data is processed by a general-purpose image analysis apparatus. An average luminance value of the image, the standard deviation value of the average luminance, and a contrast value are measured and calculated from the quantity of light which penetrates the slice and are used as indices.



## LEGAL STATUS

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(54) 【発明の名称】 脳浮腫の解析方法

(57) 【要約】

【解決手段】 脳切片に脳浮腫を惹起させる刺激を与え、当該脳細胞の経時的変化を赤外線画像データとして取得し、これを画像解析して求められた、赤外線画像の平均輝度値、平均輝度の標準偏差値、及びコントラスト値を指標として浮腫の質を定量的に把握することを特徴とする脳浮腫の解析方法。該解析方法を用いた虚血性脳浮腫治療薬の評価及びスクリーニング方法。

【効果】 脳浮腫のメカニズムの解明に寄与すると共に、特定の脳浮腫治療薬の作用評価を正確且つ迅速に行うことを可能とし、新薬のスクリーニングに利用できる。

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